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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/295,323	04/20/1999	YOSHIHIRO HONMA	B208-1031	7044

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EXAMINER

HANNETT, JAMES M

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/295,323

Applicant(s)

HONMA, YOSHIHIRO

Examiner

James M Hannett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments, see Amendment A, filed 6/12/2003, with respect to Claims 9-14 have been fully considered and are persuasive. The rejection of claims 9-14 has been withdrawn.

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

Figure 13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 1: Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,581,298 Sasaki et al in view of USPN 5,568,195 Suzuki in view of USPN 4,903,121 Uomori et al.
- 2: As for Claim 1, Sasaki et al depicts in Figure 4 the use of a signal processing apparatus, which processes a signal outputted from an image pickup element (20) having filters arranged to use plural kinds of colors (Mg, Cy, Ye, and Gr), comprising:

An Interpolation circuit (25-28) for generating a plurality of color signals (Mg, Cy, Ye, and Gr), for each pixel position of the image pickup element (20) by interpolation based on signals of pixels which surround each pixel position of the image pickup element; Column 7, Lines 26-65 discusses the process by which interpolation is obtained.

Color-difference Matrix Means (63) for generating color-difference signals from the plurality of color signals based on output of an interpolation circuit (25-28); Column 14, Lines 24-34.

Sasaki et al does not teach the use of a suppression circuit provided in front of a color difference circuit for suppressing the RGB signals generated by the interpolation circuit, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level;

Suzuki depicts in Figure 2, and teaches on Column 3, Lines 52-56, and Column 5, Lines 31-36 the use of a suppression circuit or (Clip Circuit) (13) for suppressing the plurality of color signals generated if a level of luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level. Suzuki teaches that it is advantageous to place the clipper circuit before a white balance calculation is performed so that the high and low values are not included in a white balance calculation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a clipper or suppression circuit after the color conversion circuit (60) of Sasaki et al in order to prevent the high and low luminance values from being included in a white balance calculation to achieve a better white balance as taught by Suzuki.

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Sasaki et al in view of Suzuki teaches that it is advantageous to use a suppression circuit before a white balance calculation so that the high and low values are not included in a white balance calculation. However, Sasaki et al in view of Suzuki do not teach the use of a suppression circuit that can be implemented before a color difference matrix.

Uomori et al depicts in Figure 6 and teaches on Column 10 Lines 46-56 that a clipper circuit (19) can be implements before a color difference matrix (201) operation so that the high and low values are not included in a color difference calculation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the clipper circuit of Suzuki in front of the Color difference circuit as taught by Uomori et al so that the high and low values are not included in a color difference calculation.

3: In regards to Claim 2, Sasaki et al teaches in Figure 4 and on Column 9, Lines 30-34 the use of a gamma correction circuit (62), Sasaki et al in view of Suzuki teaches providing the gamma correction means between the suppression means and color-difference matrix means (63) for performing gamma correction on the plurality of color signals output from the suppression means. Sasaki et al in view of Suzuki teaches placing the suppression means or clipper circuit before a white balance circuit so that white balance can be improved. Sasaki et al further teaches that a gamma correction circuit (62) is placed after a white balance circuit (61), and before a color difference matrix (63). Therefore, the gamma correction circuit will perform gamma correction on the plurality of color signals output from the suppression or clipper circuit.

4: As for Claim 3, Sasaki et al further teaches in Figure 4 and on Column 9, Lines 20-22 the use of a white balance circuit (61) which is viewed as a luminance signal correction means for

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correcting the luminance signal on the basis of the plurality of color signals suppressed by the suppression means.

5: In regards to Claim 4, Sasaki et al further teaches in Figure 4 that the luminance signal correcting means, which is viewed as the white balance correction circuit (61), corrects the luminance signal before the luminance signal is gamma-corrected (62).

6: As for Claim 5, Sasaki et al depicts in Figure 4 the use of a signal processing apparatus, which processes a signal outputted from an image pickup element (20) having filters arranged to use complimentary color filters of the colors (Mg, Cy, Ye, and Gr), comprising:

an interpolation circuit (25-28) for generating a plurality of color signals (Mg, Cy, Ye, and Gr), for each pixel position of the image pickup element (20) by interpolation based on signals of pixels which surround each pixel position of the image pickup element; Column 7, Lines 26-65 discusses the process by which interpolation is obtained.

RGB Matrix circuit (60) for generating RGB signals from complimentary color signals (Mg, Cy, Ye, and Gr) interpolated by the interpolation means (25-28); Column 8, Lines 52-67.

Color-difference Matrix Means (63) for generating color-difference signals from the plurality of color signals output from a gamma conversion circuit (62); Column 14, Lines 24-34.

Sasaki et al does not teach the use of a suppression circuit provided in front of a color difference circuit for suppressing the RGB signals generated by the interpolation circuit, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level;

Suzuki depicts in Figure 2, and teaches on Column 3, Lines 52-56, and Column 5, Lines 31-36 the use of a suppression circuit or (Clip Circuit) (13) for suppressing the plurality of color

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signals generated if a level of luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level. Suzuki teaches that it is advantageous to place the clipper circuit before a white balance calculation is performed so that the high and low values are not included in a white balance calculation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a clipper or suppression circuit after the color conversion circuit (60) of Sasaki et al in order to prevent the high and low luminance values from being included in a white balance calculation to achieve a better white balance as taught by Suzuki.

Sasaki et al in view of Suzuki teaches that it is advantageous to use a suppression circuit before a white balance calculation so that the high and low values are not included in a white balance calculation. However, Sasaki et al in view of Suzuki do not teach the use of a suppression circuit that can be implemented before a color difference matrix.

Uomori et al depicts in Figure 6 and teaches on Column 10 Lines 46-56 that a clipper circuit (19) can be implemented before a color difference matrix (201) operation so that the high and low values are not included in a color difference calculation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the clipper circuit of Suzuki in front of the Color difference circuit as taught by Uomori et al so that the high and low values are not included in a color difference calculation.

7: In regards to Claim 6, Sasaki et al teaches in Figure 4 and on Column 9, Lines 30-34 the use of a gamma correction means (62), Sasaki et al in view of Suzuki teaches providing the gamma correction means between the suppression means and color-difference matrix means (63)

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for performing gamma correction on the plurality of color signals output from the suppression means. Sasaki et al in view of Suzuki teaches placing the suppression means or clipper circuit before a white balance circuit so that white balance can be improved. Sasaki et al further teaches that a gamma correction circuit (62) is placed after a white balance circuit (61), and before a color difference matrix (63). Therefore, the gamma correction circuit will perform gamma correction on the plurality of color signals output from the suppression or clipper circuit.

8: As for Claim 7, Sasaki et al further teaches in Figure 4 and on Column 9, Lines 20-22 the use of a white balance circuit (61) which is viewed as a luminance signal correction means for correcting the luminance signal on the basis of the RGB Color signals suppressed by the suppression means.

9: In regards to Claim 8, Sasaki et al further teaches in Figure 4 that the luminance signal correcting means, which is viewed as the white balance correction circuit (61), corrects the luminance signal before the luminance signal is gamma-corrected (62).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10: Claims 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,903,121 Uomori et al.

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11: As for Claim 29, Uomori et al depicts in Figure 6 and teaches on Column 32-56 the use of A signal processing apparatus which processes a signal outputted from an image pickup element (1) having filters arranged to use plural kinds of colors, comprising:

A color-suppression circuit (19), provided for primary color signals or complimentary color signals obtained from the image pickup element (1), for color-suppressing the primary color signals or the complimentary color signals in accordance with the level of luminance signal; and an image pickup device comprising a color signal processing circuit for processing output by the suppression circuit. The color signal processing circuit is viewed by the examiner as all the processing that takes place after the Clipper circuit (19).

12: In regards to Claim 30, Uomori et al teaches on Column 7, Lines 60-65 the color signal processing circuit is a gamma-correction circuit (8) for gamma-correcting the output signals suppressed by the suppression circuit.

13: As for Claim 31, Uomori et al teaches on Column 6, Lines 45-50 the color signal processing circuit is a color-difference signal forming circuit (201) for converting the output signals color-suppressed by the color-suppression circuit (19) into color-difference signals.

14: In regards to Claim 32, Claim 32 is rejected for reasons discussed related to Claim 31, since Claim 31 is substantively equivalent to Claim 32.

15: As for Claim 33, It is inherent in the design of Uomori et al that it further comprises an A/D conversion circuit for A/D converting primary color signals or complimentary color signals obtained from the image pickup element before the color-suppression circuit. As described on Column 8, Lines 23-30 and as depicted in Figure 2A. Uomori depicts that the signals input to the

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delay circuit are digital signals. Therefore, it is inherent that the signals from the image sensor pass through an A/D converter.

Allowable Subject Matter

16: Claims 9-14 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest placing a color suppression circuit in front of an RGB matrix circuit. Furthermore, the prior art does not teach the use of placing a color suppression circuit between an image pickup element and an interpolation circuit.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-842-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is 703-308-6789.

James Hannett
Examiner
Art Unit 2612

JMH
September 22, 2003


WENDY R. GARBER
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